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Contact: Liz Dowling
Dowling & Dennis PR
Tel. 415-388-2794
Liz@dowlingdennis.net

Media Backgrounder

IV Dislodgement and Patient Safety

What is IV dislodgement?

When clinicians place intravenous catheters, they secure them to the catheter insertion site with one of several methods. If their chosen securement method fails, the catheter may become displaced. The name for this complication is “IV dislodgement.”

Why does IV dislodgement occur?

Catheters are normally secured to the insertion site with standard medical tape or an adhesive-based engineered securement device also applied to the skin.

Dislodgement sometimes occurs because the IV catheter was improperly secured with one of these methods. More commonly, catheters that were correctly secured become dislodged when greater forces are exerted upon the catheter than the securement method was designed to withstand. Examples include patients’ rolling over in bed or catching their lines on bed rails, transfers of patient to/from different beds, fidgeting by pediatric patients, or disoriented adult patients’ pulling out their lines.

Extent of Dislodgement

Roughly 70% to 90% of hospitalized patients in the U.S. receive IV therapy at some point during their hospital stay.¹ While no published studies have yet focused specifically on accidental dislodgement, rates of occurrence are available in published research on related issues – e.g. IV catheter-related complications.

Dislodgement rates in five published prospective randomized studies reviewed in 2015 by Helm et al. range from 3.7%-9.9%, with a mean of 6.9% and a median of 7.3%. The same authors calculated the mean dislodgement rate to be even higher in eight

prospective *observational* studies they reviewed, at 17.5%, with the median dislodgement rate being 9.2%.¹

Prospective data presented by Nicole Marsh, RN, Ph.D. and Claire Rickard, RN, Ph.D. at the Association for Vascular Access (AVA) Annual Scientific Meeting in 2017 reported a 10% dislodgement rate for 1,000 patients fitted with peripheral IV catheters.² The number of peripheral IV catheters sold in the U.S. is approximately 330 million.³ A 10% mean dislodgement rate translates to 33 million dislodgements per year in the U.S. alone.

Associated Clinical Complications

At minimum, IV dislodgement will lead to an unscheduled IV restart, which is inconvenient and uncomfortable to the patient. More serious consequences could include the need to fit the patient with a more invasive central line if dislodgement causes loss of peripheral IV site integrity; increased risk of phlebitis, infiltration, and infection; and longer treatment delays. Among the worst case scenarios are bleedouts, air embolisms, and bloodstream infections that result in the patient's death. Nurses are placed at an increased risk by dislodgements due to increase in potential of sharps exposures and injuries, plus blood or drug exposure.

Clinicians Know IV Dislodgement Is a Serious Problem

SURVEY:

An extensive survey recently probed the experiences and attitudes of nurses regarding IV dislodgements. The survey was aimed at two nurse sub-groups: bedside nurses and nurse specialists performing replacement of dislodged devices. Of the 18,895 nurses who received the survey, 1,567 responded. Here is a summary of results of the survey, which was presented as a scientific poster at the annual Association for Vascular Access conference:

- * 58% of respondents said accidental dislodgement occurs daily or often.
- * Dislodgements consume substantial nursing time. Replacement time for short PIVs was estimated to be 6 min. to 20 min. by 68% of those surveyed
- * 41% of respondents said dislodgement always presented a safety risk. 66% considered dislodgements a safety risk either always or often.
- * Short peripheral catheters are the most common type of catheter and the type most commonly dislodged.
- * Many different factors can lead to accidental dislodgement including:
 - Confused patient

- Patient physically removes IV
- IV catheter tape or securement is loose
- Patient moving around in bed with tangled tubing
- Patient going to bathroom forgetting IV is attached
- Patient hair growth or perspiration lifting dressing
- Bed transfer of patient
- Hospital staff assisting patient when IV dislodged, and

FOCUS GROUP:

The manufacturer of the Orchid Safety Release Valve™, a device designed to address the dislodgement issue, convened a focus group of vascular access experts through the New Hampshire chapter of the Infusion Nurses Society to discuss dislodgement. Group members agreed that dislodgment was a near-daily problem at their institutions and that better technology was needed to prevent the potentially serious consequences of such a frequent complication.

Footnotes

1. Helm RE, Klausner JD, Klemperer JD, Flint LM, Huang, E. Accepted but unacceptable: peripheral IV catheter failure. *Journal of Infusion Nursing*. 2015; 38(3):189-203.
2. Marsh N, Rickard C. The peripheral intravenous catheter journey – a prospective cohort study of 1,000 patients. Podium presentation at: Association for Vascular Access (AVA) Annual Scientific Meeting; September 16–19, 2017; Phoenix, Arizona.
3. [Rickard](#) CM, [Marsh](#) N, [Webster](#) J, [Playford](#) EG, [McGrail](#) MR, [Larsen](#) E, et al. Securing all intravenous devices effectively in hospitalised patients—the SAVE trial: study protocol for a multicentre randomised controlled trial. *BMJ Open*. 2015; 5(9):e008689. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4593168/> Accessed September 18, 2017.